Git

distributed version control system

A command-line session showing repository creation, addition of a file, and remote synchronization

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Using git in this class

We will aim for a breif introduction to git and GitHub, but you don't need to learn git for this class

We **will** get data and examples from my GitHub page, so it is good to be familiar with the site and what git is!

You will **not** be required to create your own gitHub account or manage assignments with git...but I won't stop you!

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can be used for version control of any file system, but was designed for software development and collaboration among programmers

When your coworker asks you which git branch you're currently working on

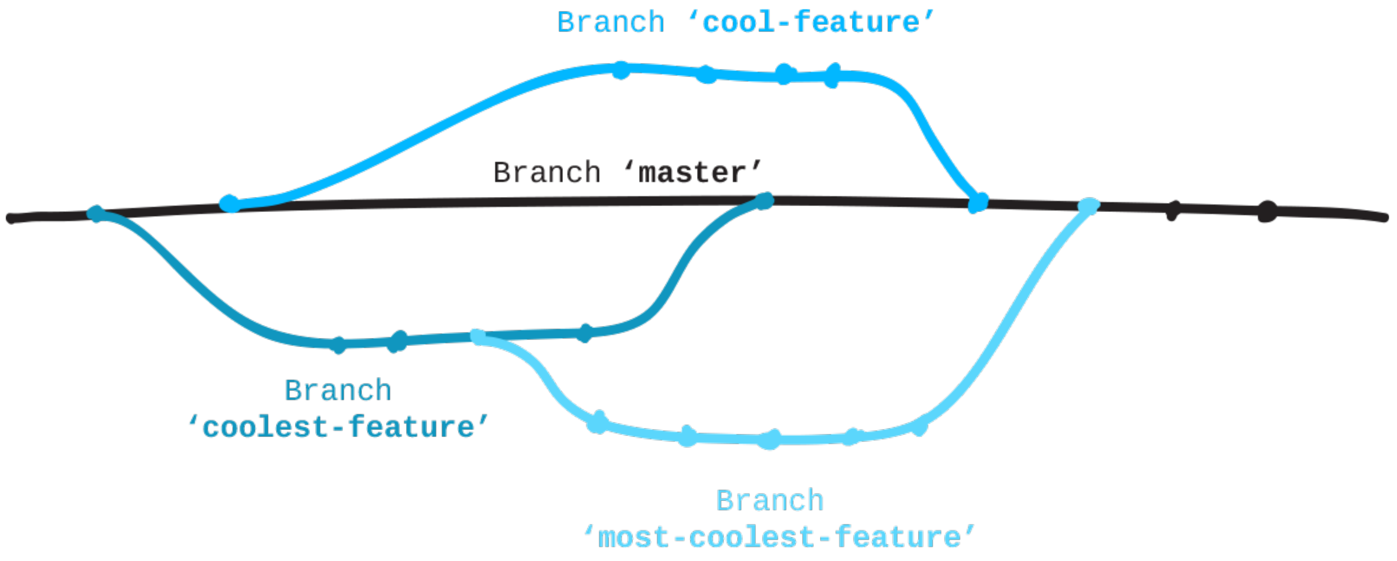
From Wikipedia...

The name "git" was given by Linus Torvalds when he wrote the very first version. He described the tool as "the stupid content tracker" and the name as (depending on your way):

- random three-letter combination that is pronounceable, and not actually used by any common UNIX command. The fact that it is a mispronunciation of "get" may or may not be relevant.
- stupid. contemptible and despicable. simple. Take your pick from the dictionary of slang.
- "global information tracker": you're in a good mood, and it actually works for you. Angels sing, and a light suddenly fills the room.

Git represents file versions as a tree object.

- file contents actually get stored as BLOBs (Binary Large Objects)
- The master is the original repository
- new branches in blue
- HEAD refers to most recent part of a branch



Git in the command line

There are many interfaces to git, including gitHub desktop

You will see me use git in the command line, so you will see a little BASH as well.

git is not a large language

I only use ~10 commands on a regular basis

commands fall under several purposes:

Create

`git clone http://link_to_repo` `git init`

Local changes

`git status` `git diff` `git commit`

Commit history

`git log`

Branching

`git branch` `git checkout`

Update & publish

`git pull` `git fetch` `git push`

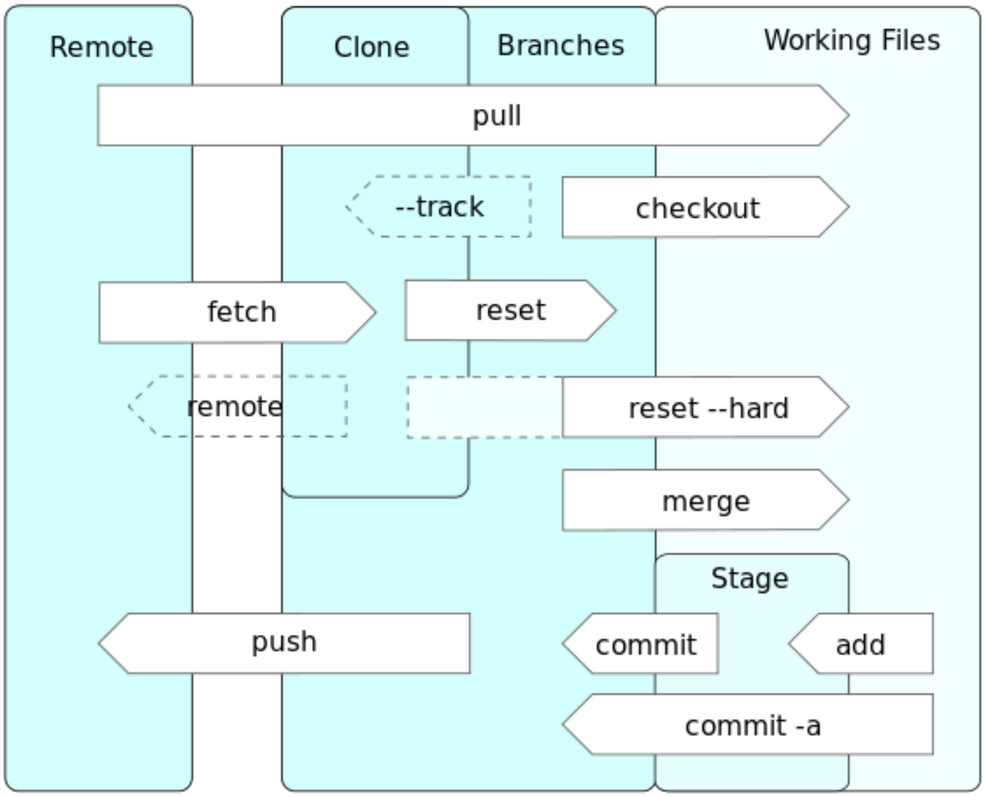
Merge

`git merge` `git rm` `git add`

*many of these commands take parameters

git cheatsheet

Terminology of git objects



By Daniel Kinzler - Own work, CC BY 3.0, Link

GitHub

A site for remote repositories that interacts with your local directories through git.

It is a place to work on projects, share and colaborate with other users, and get ***feedback*** through:

- forking/cloning
- filing an issue
- pull requests

More for collaboration than storage! Has a "freemium" model

getting started tutorial

RStudio git interface

support **again, you are not required to use git for this class, but it is a good skill to have on your CV!**